AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (*Currently amended*) An image decoding appratus, comprising:

an analyzer for analyzing, in a coded bit stream, intra-coded indicator information indicating whether all images in a moving picture sequence are intra coded ~~or not~~, wherein the intra-coded indicator information is separate from information indicating whether each individual image is intra coded; and

a decoder for decoding images contained in the moving picture sequence in response to the intra-coded indicator information analyzed by said analyzer.

2. (*Previously presented*) The image decoding apparatus according to claim 1, wherein the moving picture sequence is a video object layer comprising moving image objects of given shapes.

3. (*Previously presented*) The image decoding apparatus according to claim 1, wherein the moving picture sequence is a video object plane group constituting a video object layer comprising moving image objects of given shapes.

4. (*Currently amended*) The image decoding apparatus according to claim 1, wherein said decoder ~~decodes~~ selects the images in the moving picture sequence to decode through decimation ~~with decimating them~~ in response to the intra-coded indicator information and decoding side display rate information ~~designated on the image decoding apparatus side~~.

5. (*Currently amended*) The image decoding apparatus according to claim 1,

wherein said analyzer

analyzes~~, in the coded bit stream,~~ coding side display rate information included in the coded bit stream, and

identifies images to be decoded in response to the coding side display rate information ~~analyzed~~ and to decoding side display rate information ~~designated on the image decoding apparatus side~~, and

wherein said decoder ~~decodes~~ selects the images contained in the moving picture sequence to decode through decimation ~~with decimating them~~ in response to the intra-coded indicator

information and display time information ~~about the~~ of images identified by said analyzer ~~to be decoded~~.

6. (*Currently amended*) The image decoding apparatus according to claim 1, wherein said decoder decodes an image indicated by decoding side display time information[[,]] in response to the intra-coded indicator information ~~and display time information designated on the image decoding apparatus side, an image indicated by the display time information designated on the image decoding apparatus side~~.

7. (*Currently amended*) The image decoding apparatus according to claim 1,

wherein said analyzer

analyzes~~, in the coded bit stream,~~ coding side display rate information and display time information of images ~~contained in~~ of the moving picture sequence, wherein both the coding side display rate information and the display time information of the images are included in the coded bit stream, and

identifies images to be decoded in response to the coding side display rate information and the display time information of the images ~~analyzed~~, and

wherein said decoder decodes[[,]] the images designated by decoding side display time information in response to the intra-coded indicator information[[,]] and to the display time information of the images identified by said analyzer to be decoded ~~and to display time information designated on the image decoding apparatus side, the images designated by the display time information on the image decoding apparatus side~~.

8. (*Currently amended*) The image decoding apparatus according to claim 1,

wherein said analyzer

analyzes display time multiplex identification information in the coded bit stream, when the intra-coded indicator information ~~obtained as a result of analysis~~ indicates that all images contained in the moving picture sequence are intra coded, wherein the display time multiplex identification information indicating whether display time information of all the images contained in the moving picture sequence are multiplexed or not, and

analyzes[[,]] display time information of all the images contained in the moving picture sequence on a basis of each moving picture sequence when the display time multiplex identification information indicates that the display time information of all the images contained in the moving picture sequence is multiplexed~~, the display time information of all the images contained in the moving picture sequence on a basis of each moving picture sequence~~, and

wherein said decoder decodes the images contained in the moving picture sequence in response to the intra-coded indicator information and the display time information.

9. (*Currently amended*) The image decoding apparatus according to claim 1, wherein said decoder decodes images indicated by decoding side display time information from among the images contained in the moving picture sequence [[,]] in response to the intra-coded indicator information, display time information and the decoding side display time information ~~designated on the image decoding apparatus side, images indicated by the display time information designated on the image decoding apparatus side from among the images contained in the moving picture sequence~~.

10. (*Currently amended*) An image decoding method, comprising the steps of:

analyzing, in a coded bit stream, intra-coded indicator information indicating whether all images in a moving picture sequence are intra coded ~~or not~~, wherein the intra-coded indicator information is separate from information indicating whether each individual image is intra coded; and

decoding images contained in the moving picture sequence in response to the intra-coded indicator information analyzed by said analyzer.

11. (*Currently amended*) The image decoding method according to claim 10, wherein said decoding step ~~decodes~~ includes selecting the images in the moving picture sequence to decode through decimation ~~with decimating them~~ in response to the intra-coded indicator information and decoding side display rate information ~~designated on the decoding side~~.

12. (*Currently amended*) The image decoding method according to claim 10,

wherein the analyzing step includes

analyzes~~, in the coded bit stream,~~ coding side display rate information included in the coded bit stream, and

~~identifies~~ identifying display time information of images to be decoded ~~from~~ based on the coding side display rate information ~~analyzed~~ and ~~from~~ based on decoding side display rate information ~~on the decoding side~~,

and wherein the decoding step includes selecting ~~decodes~~ the images contained in the moving picture sequence to decode through decimation ~~with decimating them~~ in response to the intra-coded indicator information and the display time information of the images identified in the analyzing step ~~to be decoded~~.

13. (*Currently amended*) The image decoding method according to claim 10, wherein the decoding step ~~decodes,~~ includes decoding images indicated by decoding side display time information in response to the intra-coded indicator information and the decoding side display time information ~~designated on the decoding side,~~

~~images indicated by the display time information designated on the decoding side~~.

14. (*Currently amended*) The image decoding method according to claim 10,

wherein the analyzing step includes

~~analyzes, in the coded bit stream,~~ analyzing coding side display rate information and display time information of the images ~~contained in~~ of the moving picture sequence, wherein both the coding side display rate information and the display time information of the images are included in the coded bit stream, and

~~identifies~~ identifying images to be decoded in response to the coding side display rate information and the display time information of the images ~~analyzed~~, and

wherein the decoding step ~~decodes~~ includes decoding the images indicated by decoding side display time information ~~designated on the decoding side~~ in response to the intra-coded indicator information[[,]] and to the display time information of the identified images to be decoded ~~and to the display time information designated on the decoding side~~.

15. (*Currently amended*) The image decoding method according to claim 10,

wherein the analyzing step includes

~~analyzes~~ analyzing, in the coded bit stream, display time multiplex identification information when the intra-coded indicator information ~~obtained as a result of analysis~~ indicates that all images contained in the moving picture sequence are intra coded, wherein the display time multiplex identification information indicates ~~indicating~~ whether display time information of all the images contained in the moving picture sequence are multiplexed or not, and

~~analyzes,~~ analyzing the display time information of all the images contained in the moving picture sequence on a basis of each moving picture sequence when the display time multiplex identification information indicates that the display time information of all the images contained in the moving picture sequence ~~is~~ are multiplexed, ~~the display time information of all the images contained in the moving picture sequence on a basis of each moving picture sequence,~~ and

wherein the decoding step includes decoding ~~decodes~~ the images contained in the moving picture sequence in response to the intra-coded indicator information and the display time information.

16. (*Currently amended*) The image decoding method according to claim 10, wherein the decoding step ~~decodes,~~ includes decoding images indicated by decoding side display time information from among the images contained in the moving picture sequence in response to the intra-coded indicator information, to display time information and to the decoding side display time information ~~designated on an image decoding apparatus side, images indicated by the display time information designated on the image decoding apparatus side from among the images contained in the moving picture sequence~~.

17. (*Currently amended*) An image coding apparatus comprising:

an encoder for coding images contained in a moving picture sequence in response to intra-coding instruction information indicating whether all the images contained in the moving picture sequence are to be intra coded ~~or not~~; and

a multiplexer for multiplexing, into an image coded signal encoded by said encoder, intra-coded indicator information indicating whether all the images contained in the moving picture sequence are intra coded ~~or not~~, wherein the intra-coded indicator information is separate from information indicating whether each individual image is intra coded.

18. (*Currently amended*) The image coding apparatus according to claim 17, wherein said multiplexer

multiplexes display time multiplex identification information for each moving picture sequence[[,]] when the intra-coded indicator information indicates that all the images contained in the moving picture sequence are to be intra coded, wherein the display time multiplex identification information ~~that~~ indicates whether display time information of all the images contained in the moving picture sequence ~~is~~ are to be multiplexed or not, and

multiplexes display time information of all the images contained in the moving picture sequence for each moving picture sequence[[,]] when the display time multiplex identification information indicates that the display time information of all the images contained in the moving picture sequence ~~is~~ are to be

multiplexed~~, the display time information of all the images contained in the moving picture sequence~~.

19. (*Currently amended*) An image coding method comprising the steps of:

encoding images contained in a moving picture sequence in response to intra-coding instruction information instructing whether all the images contained in the moving picture sequence are to be intra coded ~~or not~~; and

multiplexing, into an encoded image coded signal, intra-coded indicator information indicating whether all the images contained in the moving picture sequence are intra coded ~~or not~~, wherein the intra-coded indicator information is separate from information indicating whether each individual image is intra coded.

20. (*Currently amended*) The method according to claim 19, wherein said multiplexing step includes:

multiplexing display time multiplex identification information for each moving picture sequence[[,]] when the intra-coded indicator information indicates that all the images contained in the moving picture sequence are to be intra coded,

wherein the display time multiplex identification information ~~that~~ indicates whether display time information of all the images contained in the moving picture sequence ~~is~~ are to be multiplexed[[,]]; and

~~multiplexes~~ multiplexing the display time information of all the images contained in the moving picture sequence for each moving picture sequence[[,]] when the display time multiplex identification information indicates that the display time information of all the images contained in the moving picture sequence ~~is~~ are to be multiplexed~~, the display time information of all the images contained in the moving picture sequence~~.

21. *(New)* An image encoding apparatus to encode a moving picture sequence as a coded bit stream, comprising:

a header multiplexer configured to multiplex header information into the coded stream, wherein the header information include an intra-code indicator that indicates whether a plurality of video object planes (VOP) of a video object layer (VOL) are intra-coded, wherein the intra-code indicator is separate from information indicating whether each individual VOP is intra-coded,

and wherein the value of the intra-code indicator is based on an intra-coded instruction signal; and

a video signal multiplexer configured to multiplex VOP data of the VOPs of the VOL into the coded bit stream,

wherein the moving picture sequence includes one or more video object planes (VOPs), zero or more groups of VOP (GOV), one or more video object layers (VOL), and one or more video objects (VO),

wherein a hierarchy of the moving picture sequence is such that each VO includes one or more VOLs, each VOL includes zero or more GOVs and/or one or more VOPs, and each GOV includes one or more VOPs, and

wherein at least one VO describes an image object occupying less than an entire frame of display.

22. *(New)* The image encoding apparatus of claim 21, wherein the header information are VOL header information corresponding to the VOL and wherein the intra-coded indicator indicates whether all VOPs of the VOL are intra-coded.

23. *(New)* The image encoding apparatus of claim 22,

wherein the VOP data for each VOP include geometry coded data, texture coded data, motion information, and macroblock-based coding mode information,

wherein the geometry coded data for the VOP comprise a plurality of alpha blocks and the texture coded data comprise a plurality of macroblocks, and

wherein the motion information indicate motion vector information for each macroblock and the macroblock-based coding mode information indicate intra/inter coding of each macroblock.

24. *(New)* The image encoding apparatus of claim 23, further comprising:

a geometry encoder configured to generate the geometry coded data and locally decoded geometry data based on input object image data;

a motion-compensation predictor configured to generate the motion information and predicted image data based on reference texture data, the input object image data, and the locally decoded geometry data;

a prediction error image generator configured to generate error image data based on a difference between the input object image data and the predicted image data;

an encode INTRA/INTER decision section configured to generate texture-to-be-coded data and the macroblock-based coding mode information, wherein the input object image data are provided as the texture-to-be-coded data when the intra-coded instruction signal indicates that all VOPs of the VOL are to be intra-coded, and wherein the error image data are provided as the texture-to-be-coded data when the intra-coded instruction signal does not indicate that all VOPs of the corresponding VOL are to be intra-coded;

a texture encoder configured to generate the texture coded data based on the texture-to-be-coded data, the macroblock-based coding mode information, and the locally decoded geometry data.

25. *(New)* The image encoding apparatus of claim 22, wherein said header multiplexer is further configured to multiplex VO header information for each VO, GOV header information for each GOV, and VOP header information for each VOP into the coded bit stream.

26. *(New)* The image encoding apparatus of claim 22, wherein a length of the intra-coded indicator is one bit.

27. *(New)* The image encoding apparatus of claim 21, wherein the header information are GOV header information of a GOV included in the VOL and wherein the intra-coded indicator indicates whether all VOPs of the GOV are intra-coded.

28. *(New)* The image encoding apparatus of claim 27,

wherein the VOP data for each VOP include geometry coded data, texture coded data, motion information, and macroblock-based coding mode information,

wherein the geometry coded data for the VOP comprise a plurality of alpha blocks and the texture coded data comprise a plurality of macroblocks, and

wherein the motion information indicate motion vector information for each macroblock and the macroblock-based coding mode information indicate intra/inter coding of each macroblock.

29. *(New)* The image encoding apparatus of claim 28, further comprising:

a geometry encoder configured to generate the geometry coded data and locally decoded geometry data based on input object image data;

a motion-compensation predictor configured to generate the motion information and predicted image data based on reference texture data, the input object image data, and the locally decoded geometry data;

a prediction error image generator configured to generate error image data based on a difference between the input object image data and the predicted image data;

an encode INTRA/INTER decision section configured to generate texture-to-be-coded data and the macroblock-based coding mode information, wherein the input object image data are provided as the texture-to-be-coded data when the intra-coded instruction signal indicates that all VOPs of the GOV are to be intra-coded, and wherein the error image data are provided as the texture-to-be-coded data when the intra-coded instruction signal does not indicate that all VOPs of the corresponding GOV are to be intra-coded;

a texture encoder configured to generate the texture coded data based on the texture-to-be-coded data, the macroblock-based coding mode information, and the locally decoded geometry data.

30. *(New)* The image encoding apparatus of claim 27, wherein said header multiplexer is further configured to multiplex VO header information for each VO, VOL header information for each VOL, and VOP header information for each VOP into the coded bit stream.

31. *(New)* An image encoding method to encode a moving picture sequence as a coded bit stream, comprising:

multiplexing header information into the coded stream, wherein the header information include an intra-code indicator that indicates whether a plurality of video object planes (VOP) of a video object layer (VOL) are intra-coded, wherein the intra-code indicator is separate from information indicating whether each individual VOP is intra-coded, and wherein a value of the intra-coded is based on the intra-coded instruction signal; and

multiplexing VOP data of the VOPs of the VOL into the coded bit stream,

wherein the moving picture sequence includes one or more video object planes (VOPs), zero or more groups of VOP (GOV), one or more video object layers (VOL), and one or more video objects (VO),

wherein a hierarchy of the moving picture sequence is such that each VO includes one or more VOLs, each VOL includes zero or more GOVs and/or one or more VOPs, and each GOV includes one or more VOPs, and

wherein at least one VO describes an image object occupying less than an entire frame of display.

32. *(New)* The image encoding method of claim 31, wherein the header information are VOL header information corresponding to the VOL and wherein the intra-coded indicator indicates whether all VOPs of the VOL are intra-coded.

33. *(New)* The image encoding method of claim 32,

wherein the VOP data for each VOP include geometry coded data, texture coded data, motion information, and macroblock-based coding mode information,

wherein the geometry coded data for the VOP comprise a plurality of alpha blocks and the texture coded data comprise a plurality of macroblocks, and

wherein the motion information indicate motion vector information for each macroblock and the macroblock-based coding mode information indicate intra/inter coding of each macroblock.

34. *(New)* The image encoding method of claim 33, further comprising:

generating the geometry coded data and locally decoded geometry data based on input object image data;

generating the motion information and predicted image data based on reference texture data, the input object image data, and the locally decoded geometry data;

generating error image data based on a difference between the input object image data and the predicted image data;

generating the texture coded data based on the input object image data, the macroblock-based coding mode information, and the locally decoded geometry data when the intra-coded instruction signal indicates that all VOPs of the VOL are to be intra-coded; and

generating the texture coded data based on the error image data, the macroblock-based coding mode information, and the locally decoded geometry data when the intra-coded instruction signal does not indicate that all VOPs of the VOL are to be intra-coded.

35. *(New)* The image encoding method of claim 32, further comprising multiplexing VO header information for each VO, GOV header information for each GOV, and VOP header information for each VOP into the coded bit stream.

36. *(New)* The image encoding apparatus of claim 32, wherein a length of the intra-coded indicator is one bit.

37. *(New)* The image encoding method of claim 31, wherein the header information are GOV header information of a GOV included in the VOL and wherein the intra-coded indicator indicates whether all VOPs of the GOV are intra-coded.

38. *(New)* The image encoding method of claim 37,

wherein the VOP data for each VOP include geometry coded data, texture coded data, motion information, and macroblock-based coding mode information,

wherein the geometry coded data for the VOP comprise a plurality of alpha blocks and the texture coded data comprise a plurality of macroblocks, and

wherein the motion information indicate motion vector information for each macroblock and the macroblock-based coding mode information indicate intra/inter coding of each macroblock.

39. *(New)* The image encoding method of claim 38, further comprising:

generating the geometry coded data and locally decoded geometry data based on input object image data;

generating the motion information and predicted image data based on reference texture data, the input object image data, and the locally decoded geometry data;

generating error image data based on a difference between the input object image data and the predicted image data;

generating the texture coded data based on the input object image data, the macroblock-based coding mode information, and the locally decoded geometry data when the intra-coded instruction signal indicates that all VOPs of the GOV are to be intra-coded; and

generating the texture coded data based on the error image data, the macroblock-based coding mode information, and the locally decoded geometry data when the intra-coded instruction signal does not indicate that all VOPs of the GOV are to be intra-coded.

40. *(New)* The image encoding method of claim 37, further comprising multiplexing VO header information for each VO, VOL header information for each VOL, and VOP header information for each VOP into the coded bit stream.

41. *(New)* A recording medium on which a moving picture sequence as a coded bit stream is recorded, the coded bit stream comprising:

an intra-code indicator within header information that indicates whether a plurality of video object planes (VOP) of a

video object layer (VOL) are intra-coded, and wherein the intra-code indicator is separate from information indicating whether each individual VOP is intra-coded; and

VOP data of the VOPs of the VOL,

wherein the moving picture sequence includes one or more video object planes (VOPs), zero or more groups of VOP (GOV), one or more video object layers (VOL), and one or more video objects (VO),

wherein a hierarchy of the moving picture sequence is such that each VO includes one or more VOLs, each VOL includes zero or more GOVs and/or one or more VOPs, and each GOV includes one or more VOPs, and

wherein at least one VO describes an image object occupying less than an entire frame of display.

42. *(New)* The recording medium of claim 41, wherein the header information are VOL header information corresponding to the VOL and wherein the intra-coded indicator indicates whether all VOPs of the VOL are intra-coded.

43. *(New)* The recording medium of claim 42,

wherein the VOP data for each VOP include geometry coded data, texture coded data, motion information, and macroblock-based coding mode information,

wherein the geometry coded data for the VOP comprise a plurality of alpha blocks and the texture coded data comprise a plurality of macroblocks, and

wherein the motion information indicate motion vector information for each macroblock and the macroblock-based coding mode information indicate intra/inter coding of each macroblock.

44. *(New)* The recording medium of claim 43, wherein the coded bit stream further comprises VO header information for each VO, GOV header information for each GOV, and VOP header information for each VOP.

45. *(New)* The recording medium of claim 42, wherein a length of the intra-coded indicator is one bit.

46. *(New)* The recording medium of claim 41, wherein the header information are GOV header information of a GOV included in

the VOL and wherein the intra-coded indicator indicates whether all VOPs of the GOV are intra-coded.

47. *(New)* The recording medium of claim 46,

wherein the VOP data for each VOP include geometry coded data, texture coded data, motion information, and macroblock-based coding mode information,

wherein the geometry coded data for the VOP comprise a plurality of alpha blocks and the texture coded data comprise a plurality of macroblocks, and

wherein the motion information indicate motion vector information for each macroblock and the macroblock-based coding mode information indicate intra/inter coding of each macroblock.

48. *(New)* The recording medium of claim 47, wherein said coded bit stream further comprises VO header information for each VO, VOL header information for each VOL, and VOP header information.

49. *(New)* An image decoding apparatus to decode a moving picture sequence encoded as a coded bit stream, comprising:

a header analyzer configured to analyzer header information of the coded stream, wherein the header information include an intra-code indicator that indicates whether a plurality of video object planes (VOP) of a video object layer (VOL) are intra-coded, and wherein the intra-code indicator is separate from information indicating whether each individual VOP is intra-coded; and

a decoder configured to decode VOP data of the VOPs of the VOL in the coded bit stream,

wherein the moving picture sequence includes one or more video object planes (VOPs), zero or more groups of VOP (GOV), one or more video object layers (VOL), and one or more video objects (VO),

wherein a hierarchy of the moving picture sequence is such that each VO includes one or more VOLs, each VOL includes zero or more GOVs and/or one or more VOPs, and each GOV includes one or more VOPs, and

wherein at least one VO describes an image object occupying less than an entire frame of display.

50. *(New)* The image decoding apparatus of claim 49, wherein the header information are VOL header information corresponding to the VOL and wherein the intra-coded indicator indicates whether all VOPs of the VOL are intra-coded.

51. *(New)* The image decoding apparatus of claim 50,

wherein the VOP data for each VOP include geometry coded data, texture coded data, motion information, and macroblock-based coding mode information,

wherein the geometry coded data for the VOP comprise a plurality of alpha blocks and the texture coded data comprise a plurality of macroblocks, and

wherein the motion information indicate motion vector information for each macroblock and the macroblock-based coding mode information indicate intra/inter coding of each macroblock.

52. *(New)* The image decoding apparatus of claim 51, wherein the decoder comprises:

a video signal analyzer configured to analyze the VOP data of each VOP of the VOL, and generate geometry coded data and texture coded data for each VOP based on the VOP data;

a geometry decoder configured to generate decoded geometry data based on the geometry coded data;

a texture decoder configured to generate decoded textured data based on the texture coded data;

a decode INTRA/INTER decision section configured to output the decoded textured data when the intra-coded indicator indicates that all VOPs of the VOL are intra-coded.

53. *(New)* The image decoding apparatus of claim 52,

wherein said video signal analyzer is configured to generate macroblock-based coding mode information based on the VOP data, wherein the macroblock-based coding mode information indicate whether or not the texture coded data are intra-coded, and

wherein said decode INTRA/INTER decision section is configured to output the decoded textured data corresponding to the texture coded data when the macroblock-based coding mode information indicate that the texture coded data are intra-coded.

54. *(New)* The image decoding apparatus of claim 53,

wherein said video signal analyzer is configured to generate motion information of the VOP based on the VOP data,

wherein said image decoding apparatus further comprises a motion compensator configured to generate decoded prediction texture data based on the motion information, and

wherein said decode INTRA/INTER decision section is configured to generate a sum of the decoded textured data and the decoded prediction texture data when the intra-code indicator does not indicate that all VOPs of the VOL are intra-coded and the macroblock-based coding mode information indicate the texture coded data are not intra-coded.

55. *(New)* The image decoding apparatus of claim 53, wherein said header analyzer is configured to recognize a reference time code multiplexed into the GOV header information of the GOVs of the VOL.

56. *(New)* The image decoding apparatus of claim 55, wherein said header analyzer is configured to perform the following for each VOP based on the corresponding VOP header information:

determine a modulo-time base of the VOP,

determine a VOP time increment of the VOP,

determine a decoded VOP absolute display time indicating an absolute display time of the VOP based on the modulo-time base of the VOP, the VOP time increment of the VOP, and the reference time code,

determine whether the VOP is to be decoded or is to be skipped,

analyze video information headers of the VOP when it is determined that the VOP is to be decoded, and

skip the VOP from display when it is determined that the VOP is to be skipped.

57. *(New)* The image decoding apparatus of claim 56, wherein said VOP header analyzer is configured to determine that the VOP is to be decoded when one of the following is true:

the intra-coded indicator indicates that all VOPs of the VOL are intra-coded, and

the intra-coded indicator does not indicate that all VOPs of the VOL are intra-coded and the decoded VOP absolute display time of the VOP coincides with a decoding side display time.

58. *(New)* The image decoding apparatus of claim 57, wherein said VOP header analyzer is configured to determine that the decoded VOP absolute display time of the VOP coincides with the decoding side display time based on a decoding side VOP display rate.

59. *(New)* The image decoding apparatus of claim 50, wherein the length of the intra-coded indicator is one bit.

60. *(New)* The image decoding apparatus of claim 49, wherein the header information are GOV header information corresponding to a GOV of the VOL and wherein the intra-coded indicator indicates whether all VOPs of the GOV are intra-coded.

61. *(New)* The image decoding apparatus of claim 60,

wherein the VOP data for each VOP include geometry coded data, texture coded data, motion information, and macroblock-based coding mode information,

wherein the geometry coded data for the VOP comprise a plurality of alpha blocks and the texture coded data comprise a plurality of macroblocks, and

wherein the motion information indicate motion vector information for each macroblock and the macroblock-based coding mode information indicate intra/inter coding of each macroblock.

62. *(New)* The image decoding apparatus of claim 61, wherein the decoder comprises:

a video signal analyzer configured to analyze the VOP data of each VOP of the GOV, and generate geometry coded data and texture coded data for each VOP based on the VOP data;

a geometry decoder configured to generate decoded geometry data based on the geometry coded data;

a texture decoder configured to generate decoded textured data based on the texture coded data;

a decode INTRA/INTER decision section configured to output the decoded textured data when the intra-coded indicator indicates that all VOPs of the GOV are intra-coded.

63. *(New)* The image decoding apparatus of claim 62,

wherein said video signal analyzer is configured to generate macroblock-based coding mode information based on the VOP data,

wherein the macroblock-based coding mode information indicate whether or not the texture coded data are intra-coded, and

wherein said decode INTRA/INTER decision section is configured to output the decoded textured data corresponding to the texture coded data when the macroblock-based coding mode information indicate that the texture coded data are intra-coded.

64. *(New)* The image decoding apparatus of claim 63,

wherein said video signal analyzer is configured to generate motion information of the VOP based on the VOP data,

wherein said image decoding apparatus further comprises a motion compensator configured to generate decoded prediction texture data based on the motion information from said video signal analyzer, and

wherein said decode INTRA/INTER decision section is configured to generate a sum of the decoded textured data and the decoded prediction texture data when the intra-code indicator does not indicate that all VOPs of the GOV are intra-coded and the macroblock-based coding mode information indicate the texture coded data are not intra-coded.

65. *(New)* The image decoding apparatus of claim 63, wherein said header analyzer is further configured to recognize a reference time code multiplexed into the GOV header information.

66. *(New)* The image decoding apparatus of claim 65, wherein VOP header analyzer is configured to perform the following for each VOP based on the corresponding VOP header information:

determine a modulo-time base of the VOP,

determine a VOP time increment of the VOP,

determine a decoded VOP absolute display time indicating an absolute display time of the VOP based on the modulo-time base of the VOP, the VOP time increment of the VOP, and the reference time code,

determine whether the VOP is to be decoded or is to be skipped,

analyze video information headers of the VOP when it is determined that the VOP is to be decoded, and

skip the VOP from display when it is determined that the VOP is to be skipped.

67. *(New)* The image decoding apparatus of claim 66, wherein said VOP header analyzer is configured to determine that the VOP is to be decoded when one of the following is true:

the intra-coded indicator indicates that all VOPs of the GOV are intra-coded, and

the intra-coded indicator does not indicate that all VOPs of the GOV are intra-coded and the decoded VOP absolute display time of the VOP coincides with a decoding side display time.

68. *(New)* The image decoding apparatus of claim 67, wherein said VOP header analyzer is configured to determine that the decoded VOP absolute display time of the VOP coincides with the decoding side display time based on a decoding side VOP display rate.

69. *(New)* An image decoding method to decode a moving picture sequence encoded as a coded bit stream, comprising:

analyzing header information of the coded stream, wherein the header information include an intra-code indicator that indicates whether a plurality of video object planes (VOP) of a video object layer (VOL) are intra-coded, and wherein the intra-code indicator

is separate from information indicating whether each individual VOP is intra-coded; and

decoding VOP data of the VOPs of the VOL in the coded bit stream,

wherein the moving picture sequence includes one or more video object planes (VOPs), zero or more groups of VOP (GOV), one or more video object layers (VOL), and one or more video objects (VO),

wherein a hierarchy of the moving picture sequence is such that each VO includes one or more VOLs, each VOL includes zero or more GOVs and/or one or more VOPs, and each GOV includes one or more VOPs, and

wherein at least one VO describes an image object occupying less than an entire frame of display.

70. *(New)* The image decoding method of claim 69, wherein the header information are VOL header information corresponding to the VOL and wherein the intra-coded indicator indicates whether all VOPs of the VOL are intra-coded.

71. *(New)* The image decoding method of claim 70,

wherein the VOP data for each VOP include geometry coded data, texture coded data, motion information, and macroblock-based coding mode information,

wherein the geometry coded data for the VOP comprise a plurality of alpha blocks and the texture coded data comprise a plurality of macroblocks, and

wherein the motion information indicate motion vector information for each macroblock and the macroblock-based coding mode information indicate intra/inter coding of each macroblock.

72. *(New)* The image decoding method of claim 71, wherein said decoding step comprises:

analyzing the VOP data of each VOP of the corresponding VOL, and generating geometry coded data and texture coded data for each VOP based on the VOP data;

generating decoded geometry data based on the geometry coded data;

generating decoded textured data based on the texture coded data;

outputting the decoded textured data when the intra-coded indicator indicates that all VOPs of the VOL are intra-coded.

73. *(New)* The image decoding method of claim 72,

wherein said decoding step further comprises generating macroblock-based coding mode information based on the VOP data, wherein the macroblock-based coding mode information indicate whether or not the texture coded data are intra-coded, and

wherein said outputting step further comprises outputting the decoded textured data corresponding to the texture coded data when the macroblock-based coding mode information indicate that the texture coded data are intra-coded.

74. *(New)* The image decoding method of claim 73, wherein said decoding step further comprises:

generating decoded prediction texture data based on the motion information; and

generating a sum of the decoded textured data and the decoded prediction texture data when the intra-code indicator does not indicate that all VOPs of the VOL are intra-coded and the

macroblock-based coding mode information indicate the texture coded data are not intra-coded.

75. *(New)* The image decoding method of claim 73, wherein said decoding step further comprises recognizing a reference time code multiplexed into at least one GOV header information.

76. *(New)* The image decoding method of claim 75, wherein said decoding step further comprises analyzing VOP header information for each VOP of the VOL, wherein the step of analyzing the VOP header information comprises:

determining a modulo-time base of the VOP;

determining a VOP time increment of the VOP;

determining a decoded VOP absolute display time indicating an absolute display time of the VOP based on the modulo-time base of the VOP, the VOP time increment of the VOP, and the reference time code;

determining whether the VOP is to be decoded or is to be skipped,

analyzing video information headers of the VOP when it is determined that the VOP is to be decoded; and

skipping the VOP from display when it is determined that the VOP is to be skipped.

77. *(New)* The image decoding method of claim 76, wherein said step of determining whether the VOP is to be decoded or skipped includes:

determining that the VOP is to be intra-coded when the intra-coded indicator indicates that all VOPs of the VOL are intra-coded; and

determining that the VOP is to be intra-coded when the intra-coded indicator does not indicate that all VOPs of the VOL are intra-coded and the decoded VOP absolute display time of the VOP coincides with a decoding side display time.

78. *(New)* The image decoding method of claim 77, wherein said decoding step further comprises determining that the decoded VOP absolute display time of the VOP coincides with the decoding side display time based on a decoding side VOP display rate.

79. *(New)* The image decoding method of claim 70, wherein the length of the intra-coded indicator is one bit.

80. *(New)* The image decoding method of claim 69, wherein the header information are GOV header information corresponding to a GOV of the VOL and wherein the intra-coded indicator indicates whether all VOPs of the GOV are intra-coded.

81. *(New)* The image decoding method of claim 80,

wherein the VOP data for each VOP include geometry coded data, texture coded data, motion information, and macroblock-based coding mode information,

wherein the geometry coded data for the VOP comprise a plurality of alpha blocks and the texture coded data comprise a plurality of macroblocks, and

wherein the motion information indicate motion vector information for each macroblock and the macroblock-based coding mode information indicate intra/inter coding of each macroblock.

82. *(New)* The image decoding method of claim 81, wherein said decoding step comprises:

analyzing the VOP data of each VOP of the corresponding GOV, and generate geometry coded data and texture coded data for each VOP based on the VOP data;

generating decoded geometry data based on the geometry coded data;

generating decoded textured data based on the texture coded data;

outputting the decoded textured data when the intra-coded indicator indicates that all VOPs of the GOV are intra-coded.

83. *(New)* The image decoding method of claim 82,

wherein said decoding step further comprises generating macroblock-based coding mode information based on the VOP data, wherein the macroblock-based coding mode information indicate whether or not the texture coded data are intra-coded, and

wherein said outputting step further comprises outputting the decoded textured data corresponding to the texture coded data when the macroblock-based coding mode information indicate that the texture coded data are intra-coded.

84. *(New)* The image decoding method of claim 83, wherein said decoding step further comprises:

generating decoded prediction texture data based on the motion information from said video signal analyzer; and

generating a sum of the decoded textured data and the decoded prediction texture data when the intra-code indicator does not indicate that all VOPs of the GOV are intra-coded and the macroblock-based coding mode information indicate the texture coded data are not intra-coded.

85. *(New)* The image decoding method of claim 83, wherein said decoding step further comprises recognizing a reference time code multiplexed into the GOV header information.

86. *(New)* The image decoding method of claim 85, wherein said decoding step further comprises analyzing VOP header information for each VOP of the GOV, wherein the step of analyzing the VOP header information comprises:

determining a modulo-time base of the VOP;

determining a VOP time increment of the VOP;

determining a decoded VOP absolute display time indicating an absolute display time of the VOP based on the modulo-time base of the VOP, the VOP time increment of the VOP, and the reference time code;

determining whether the VOP is to be decoded or is to be skipped,

analyzing video information headers of the VOP when it is determined that the VOP is to be decoded; and

skipping the VOP from display when it is determined that the VOP is to be skipped.

87. *(New)* The image decoding method of claim 86, wherein said step of determining whether the VOP is to be decoded or skipped includes:

determining that the VOP is to be intra-coded when the intra-coded indicator indicates that all VOPs of the GOV are intra-coded; and

determining that the VOP is to be intra-coded when the intra-coded indicator does not indicate that all VOPs of the GOV are intra-coded and the decoded VOP absolute display time of the VOP coincides with a decoding side display time.

88. *(New)* The image decoding method of claim 87, wherein said decoding step further comprises determining that the decoded VOP absolute display time of the VOP coincides with the decoding side display time based on a decoding side VOP display rate and the decoded VOP absolute display time of the VOP.

89. *(New)* The image encoding apparatus of claim 22, wherein said header multiplexer is configured to multiplex a VOP display time multiplexed indicator into the VOL header information when the intra-code indicator indicates that all VOPs of the VOL are intra-coded, wherein the VOP display time multiplexed indicator indicates whether or not a VOP display time information for each VOP of the VOL are to be included in the coded bit stream, and wherein a value of the VOP display time multiplexed indicator is based on a VOP display time multiplexed instruction signal.

90. *(New)* The image encoding apparatus of claim 89, wherein said header multiplexer is configured to multiplex VOP display time information for each VOP into the VOL header information when the VOP display time multiplexed instruction signal indicates that

the VOP display time of all VOPs of the VOL are to be included in the coded bit stream.

91. *(New)* The image encoding apparatus of claim 90, wherein said header multiplexer determines the VOP display time of each VOP based on an encoding side time code.

92. *(New)* The image encoding apparatus of claim 22, wherein said header multiplexer is configured to multiplex a VOP display time multiplexed indicator into GOV header information of a GOV of the VOL when the intra-code indicator indicates that all VOPs of the VOL are intra-coded, wherein the VOP display time multiplexed indicator indicates whether or not a VOP display time information for each VOP of the GOV are to be included in the coded bit stream, and wherein a value of the VOP display time multiplexed indicator is based on a VOP display time multiplexed instruction signal.

93. *(New)* The image encoding apparatus of claim 92, wherein said header multiplexer is configured to multiplex VOP display time information for each VOP of the GOV into the GOV header information when the VOP display time multiplexed instruction

signal indicates that the VOP display time of all VOPs of the GOV are to be included in the coded bit stream.

94. *(New)* The image encoding apparatus of claim 94, wherein said header multiplexer determines the VOP display time of each VOP based on an encoding side time code.

95. *(New)* The image encoding apparatus of claim 27, wherein said header multiplexer is configured to multiplex a VOP display time multiplexed indicator into the GOV header information when the intra-code indicator indicates that all VOPs of the GOV are intra-coded, wherein the VOP display time multiplexed indicator indicates whether or not VOP display time information for all VOPs of the GOV are to be included in the coded bit stream, and wherein a value of the VOP display time multiplexed indicator is based on a VOP display time multiplexed instruction signal.

96. *(New)* The image encoding apparatus of claim 95, wherein said header multiplexer is configured to multiplex VOP display time information for each VOP into the GOV header information when the VOP display time multiplexed instruction signal indicates that

the VOP display time of all VOPs of the GOV are to be included in the coded bit stream.

97. *(New)* The image encoding apparatus of claim 96, wherein said header multiplexer determines the VOP display time of each VOP based on an encoding side time code.

98. *(New)* The image encoding method of claim 32, further comprising:

receiving a VOP display time multiplexed instruction signal which indicates whether or not VOP display times of all VOPs of the VOL are to be included in the coded bit stream; and

multiplexing a VOP display time multiplexed indicator corresponding to the VOP display time multiplexed instruction signal into the VOL header information when the intra-code indicator indicates that all VOPs of the VOL are intra-coded.

99. *(New)* The image encoding method of claim 98, further comprising multiplexing the VOP display time information for each VOP into the VOL header information when the VOP display time

multiplexed instruction signal indicates that the VOP display time of all VOPs of the VOL are to be included in the coded bit stream.

100. *(New)* The image encoding method of claim 99, further comprising determining the VOP display time of each VOP based on an encoding side time code.

101. *(New)* The image encoding method of claim 32, further comprising:

receiving a VOP display time multiplexed instruction signal which indicates whether or not VOP display times of all VOPs of a GOV of the VOL are to be included in the coded bit stream; and

multiplexing a VOP display time multiplexed indicator corresponding to the VOP display time multiplexed instruction signal into the GOV header information of the GOV when the intra-code indicator indicates that all VOPs of the VOL are intra-coded.

102. *(New)* The image encoding method of claim 101, further comprising multiplexing the VOP display time information for each VOP of the GOV into the GOV header information when the VOP display time multiplexed instruction signal indicates that the VOP

display time of all VOPs of the GOV are to be included in the coded bit stream.

103. *(New)* The image encoding method of claim 102, further comprising determining the VOP display time of each VOP based on an encoding side time code.

104. *(New)* The image encoding method of claim 37, further comprising:

receiving a VOP display time multiplexed instruction signal which indicates whether or not VOP display times of all VOPs of the GOV are to be included in the coded bit stream; and

multiplexing a VOP display time multiplexed indicator corresponding to the VOP display time multiplexed instruction signal into the GOV header information when the intra-code indicator indicates that all VOPs of the GOV are intra-coded.

105. *(New)* The image encoding method of claim 104, further comprising multiplexing the VOP display time information for each VOP into the GOV header information when the VOP display time

multiplexed instruction signal indicates that the VOP display time of all VOPs of the GOV are to be included in the coded bit stream.

106. *(New)* The image encoding method of claim 105, further comprising determining the VOP display time of each VOP based on an encoding side time code.

107. *(New)* The recording medium of claim 42, wherein the coded bit stream further comprises a VOP display time multiplexed indicator multiplexed into the VOL header information when intra-coded indicator indicates that all VOPs of the VOL are intra-coded, wherein the VOP display time multiplexed indicator indicates whether or not a VOP display times of all VOPs of the VOL are included in the coded bit stream.

108. *(New)* The recording medium of claim 107, wherein the coded bit stream further comprises the VOP display time information for each VOP in the VOL header information when the VOP display time multiplexed indicator indicates that the VOP display times of all VOPs of the VOL are included in the coded bit stream.

109. *(New)* The recording medium of claim 42, wherein the coded bit stream further comprises a VOP display time multiplexed indicator multiplexed into the GOV header information of the GOV of the VOL when intra-coded indicator indicates that all VOPs of the VOL are intra-coded, wherein the VOP display time multiplexed indicator indicates whether or not a VOP display times of all VOPs of the GOV are included in the coded bit stream.

110. *(New)* The recording medium of claim 106, wherein the coded bit stream further comprises the VOP display time information for each VOP in the GOV header information when the VOP display time multiplexed indicator indicates that the VOP display times of all VOPs of the GOV are included in the coded bit stream.

111. *(New)* The recording medium of claim 46, wherein the coded bit stream further comprises a VOP display time multiplexed indicator multiplexed into the GOV header information when intra-coded indicator indicates that all VOPs of the GOV are intra-coded, wherein the VOP display time multiplexed indicator indicates

whether or not a VOP display times of all VOPs of the GOV are included in the coded bit stream.

112. *(New)* The recording medium of claim 111, wherein the coded bit stream further comprises the VOP display time information for each VOP in the GOV header information when the VOP display time multiplexed indicator indicates that the VOP display times of all VOPs of the GOV are included in the coded bit stream.

113. *(New)* The image decoding apparatus of claim 50, wherein said header analyzer is configured to recognize a VOP display time multiplexed indicator in the VOL header information when the intra-code indicator indicates that all VOPs of the VOL are intra-coded, and wherein the VOP display time multiplexed indicator indicates whether or not a VOP display time information for each VOP of the VOL are included in the coded bit stream.

114. *(New)* The image decoding apparatus of claim 113, wherein said header analyzer is configured to analyze VOP display time information for each VOP in the VOL header information when the

VOP display time multiplexed instruction signal indicates that the VOP display time of all VOPs of the VOL are included in the coded bit stream.

115. *(New)* The image decoding apparatus of claim 114, wherein said header analyzer is configured to perform random access based on the VOP display time information of the VOPs of the VOL and an externally set time code.

116. *(New)* The image decoding apparatus of claim 50, wherein said header analyzer is configured to recognize a VOP display time multiplexed indicator in a GOV header information of a GOV of the VOL when the intra-code indicator indicates that all VOPs of the VOL are intra-coded, and wherein the VOP display time multiplexed indicator indicates whether or not a VOP display time information for each VOP of the GOV are included in the coded bit stream.

117. *(New)* The image decoding apparatus of claim 116, wherein said header analyzer is configured to analyze VOP display time information for each VOP in the GOV header information when the VOP display time multiplexed instruction signal indicates that the

VOP display time of all VOPs of the GOV of the VOL are included in the coded bit stream.

118. *(New)* The image decoding apparatus of claim 117, wherein said header analyzer is configured to perform random access based on the VOP display time information of the VOPs of the GOV of the VOL and an externally set time code.

119. *(New)* The image decoding apparatus of claim 60, wherein said header analyzer is configured to recognize a VOP display time multiplexed indicator in the GOV header information when the intra-code indicator indicates that all VOPs of the GOV are intra-coded, and wherein the VOP display time multiplexed indicator indicates whether or not a VOP display time information for each VOP of the GOV are included in the coded bit stream.

120. *(New)* The image decoding apparatus of claim 119, wherein said header analyzer is configured to analyze VOP display time information for each VOP in the GOV header information when the VOP display time multiplexed instruction signal indicates that the

VOP display time of all VOPs of the GOV are included in the coded bit stream.

121. *(New)* The image decoding apparatus of claim 120, wherein said header analyzer is configured to perform random access based on the VOP display time information of the VOPs of the GOV and an externally set time code.

122. *(New)* The image decoding method of claim 70, further comprising recognizing a VOP display time multiplexed indicator in the VOL header information when the intra-code indicator indicates that all VOPs of the VOL are intra-coded, wherein the VOP display time multiplexed indicator indicates whether or not a VOP display time information for each VOP of the VOL are included in the coded bit stream.

123. *(New)* The image decoding method of claim 122, further comprising analyzing VOP display time information for each VOP in the VOL header information when the VOP display time multiplexed instruction signal indicates that the VOP display time of all VOPs of the VOL are included in the coded bit stream.

124. *(New)* The image decoding method of claim 123, further comprising performing random access based on the VOP display time information of the VOPs of the VOL and an externally set time code.

125. *(New)* The image decoding method of claim 70, further comprising recognizing a VOP display time multiplexed indicator in a GOV header information of a GOV of the VOL when the intra-code indicator indicates that all VOPs of the VOL are intra-coded, and wherein the VOP display time multiplexed indicator indicates whether or not a VOP display time information for each VOP of the GOV are included in the coded bit stream.

126. *(New)* The image decoding method of claim 125, further comprising analyzing VOP display time information for each VOP in the GOV header information when the VOP display time multiplexed instruction signal indicates that the VOP display time of all VOPs of the GOV of the VOL are included in the coded bit stream.

127. *(New)* The image decoding method of claim 126, further comprising performing random access based on the VOP display time

information of the VOPs of the GOV of the VOL and an externally set time code.

128. *(New)* The image decoding method of claim 80, further comprising recognizing a VOP display time multiplexed indicator in the GOV header information when the intra-code indicator indicates that all VOPs of the GOV are intra-coded, and wherein the VOP display time multiplexed indicator indicates whether or not a VOP display time information for each VOP of the GOV are included in the coded bit stream.

129. *(New)* The image decoding method of claim 128, further comprising analyzing VOP display time information for each VOP in the GOV header information when the VOP display time multiplexed instruction signal indicates that the VOP display time of all VOPs of the GOV are included in the coded bit stream.

130. *(New)* The image decoding method of claim 129, further comprising performing random access based on the VOP display time information of the VOPs of the GOV and an externally set time code.

131. *(New)* The image decoding apparatus for receiving a coded bit stream including an intra-coded indicator information in a code word, the intra-coded indicator information indicating whether all VOPs of a moving picture sequence of a VOL are intra-coded into header information of the moving picture sequence of the VOL made up of a plurality of VOPs,

the image decoding apparatus comprising a header analyzer configured to analyze the header information of the moving picture sequence of the VOL,

wherein the image decoding apparatus is configured to recognize that one or more VOPs in the VOL are randomly accessible when the intra-coded indicator information output from the header analyzer indicates that all the VOPs in the VOL are intra-coded.

132. *(New)* The image decoding apparatus according to claim 131, wherein the coded word includes VOP rate information indicating a number of VOP display planes per unit time of the VOP forming the moving picture sequence, in the header information of the moving picture sequence of the VOL,

wherein the header analyzer comprises a VOP rate information analyzer for analyzing the VOP rate information, and

wherein the image decoding apparatus is configured to recognize that time information of the one or more VOPs in the VOL are randomly accessible based on the VOP rate information when the intra-coded indicator information output from the header analyzer indicates all the VOPs of the VOL are intra-coded.